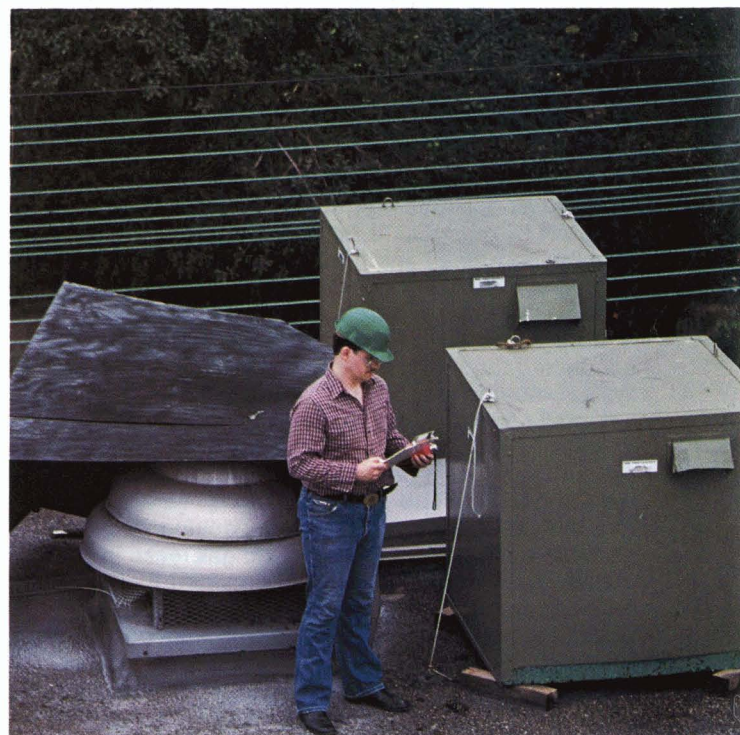
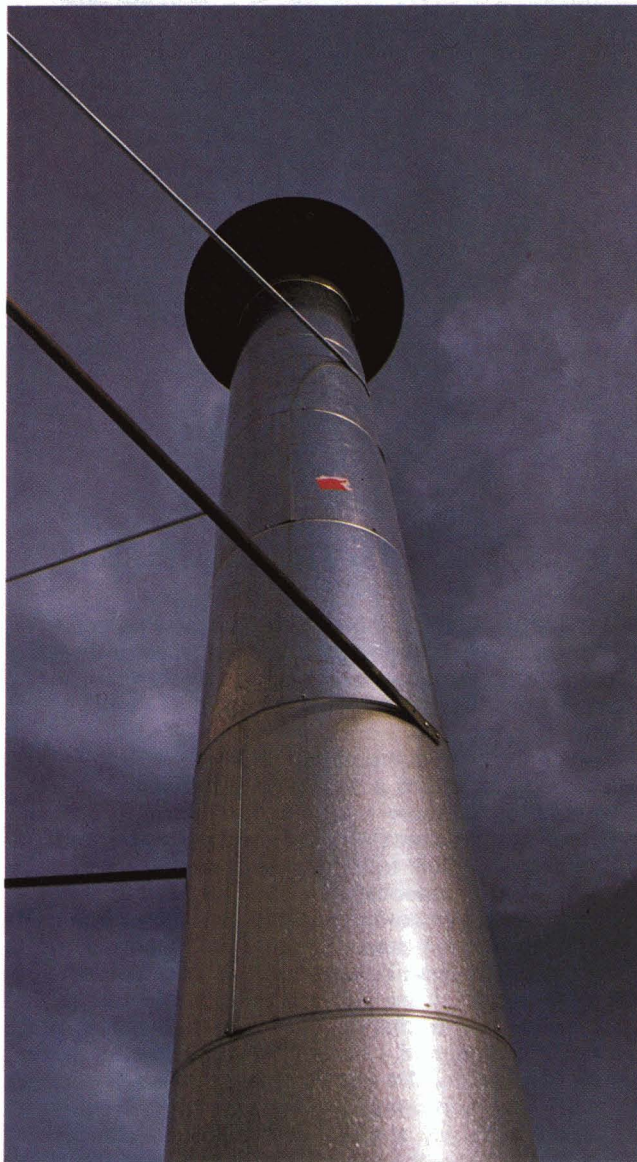


## NOISE ABATEMENT

A growing field of business in the United States is provision of materials and services to control noise, particularly in industrial environments. Many firms are finding it necessary to institute noise abatement procedures in order to comply with federal, state and local laws; labor unions are also insistent about curbing factory noise because studies indicate that long exposure to high noise levels can have adverse effect on human health. Among the various noise abatement techniques and systems being employed is a line of highly effective acoustic materials known as SMART® Products, which are based on a compound that emerged from space research. The SMART (Sound Modification and Regulated Temperature) line is manufactured by Environmental Health Systems (EHS), Inc., Framingham, Massachusetts.

The SMART compound, a liquid plastic mixture with exceptional energy and sound absorbing qualities, had its genesis in the Apollo lunar landing program. It was discovered by Arthur C. Metzger, then a NASA employee working on the Apollo guidance system, an early version of which experienced severe vibration problems. The trouble was traced to the plastic compound encapsulating the system's electronics; the compound did not absorb sufficient energy to dampen vibrations. Looking for a solution, Metzger found a better compound, a very elastic type of plastic that literally soaked up energy and, in addition to its





vibration-damping ability, offered extraordinary potential as a noise abatement material. After his retirement from NASA, Metzger founded EHS to develop and market the compound and a number of associated products, such as noise-curbing adhesives, partitions and enclosures.

At top left on the opposite page is Mrs. Mary Hilton, president of Dy Dee Services, Inc., standing by an EHS acoustic enclosure that solved a big problem for her company. Dy Dee Services, a diaper laundry, has four plants in Michigan and Indiana. The Grand Rapids, Michigan facility, which borders on a residential area, was having trouble with the community because of plant noise; there were angry complaints, threatening phone calls, a company vehicle was vandalized and there was even a bomb threat. The City of Grand Rapids ordered compliance with the sound code and that meant a very large reduction of 20 decibels.

Mrs. Hilton learned of SMART Products and sought



assistance from Arthur Metzger. His survey indicated that the crux of the noise problem was in the laundry's big dryers, specifically in the gas burners and highpowered blower motors of the dryers; the exhaust—and noise—was vented to the plant's roof. EHS designed and built the rooftop enclosure pictured, made of noise-blocking honeycomb panels treated with layers of SMART compound. As an ancillary measure, EHS painted the inside of the plant's boiler stack (far left) with SMART compound; in the adjacent photo, a technician is preparing the compound. These measures worked and Dy Dee Services has complied with the Grand Rapids sound code.

Refined Sugars & Syrups, Yonkers, New York faced a similar problem. The company's plant is just across the railroad tracks from a residential zone and the neighborhood initiated legal action to curb the plant's noise. EHS pinpointed the noise source: a pair of blowers atop the facility where the company makes confectioners sugar. EHS built two acoustic enclosures (the green "boxes" in the bottom photo, opposite page) and the neighborhood is again peaceful.

EHS also supplied the sugar refinery an audiometric test booth (below left). EHS manufactures these booths for industrial firms that must comply with a federal regulation requiring periodic hearing tests in soundproof rooms for employees who are consistently subjected to high noise levels.

Another SMART product is the Acoustical Office Partition shown below. This one is located at Weston (Massachusetts) Middle School; it enables the administrative staffer to work in quiet despite loud student activity on the other side of the panel. EHS is producing a large number of these partitions, under contract with the Government Services Administration, for use as sound-blocking, efficiency-improving walls in government offices.

®SMART is a registered trademark of Environmental Health Systems, Inc.

